

Tairoku AMAKAWA*: Notes on Japanese Hepaticae (15)
Ceratolejeunea and *Lopholejeunea* of Ryukyus

尼川大録: 日本産苔類報告 (15)

琉球の *Ceratolejeunea* 属 及び *Lopholejeunea* 属

41) *Ceratolejeunea ryukyuensis* Amakawa, sp. nov. (Fig. 28)

Monoica, minor, fusco-brunnea, depresso-caespitans. Caulis ad 15 mm longus, ca. 0.1 mm in diametro, cum foliis 0.8-1 mm latus; in sectione transversa cellulis epidermibus 7 (in parte 8), multo majoribus quam medularibus, 25-50 \times 12-25 μ , ipsis medularibus 12-16; pinnatim vel bipinnatim irregulariterque ramosus, ramis brevibus interdum \pm microphyllis. Folia caulina imbricata, late patula, antico caulem superantia, basi ad medium inserta, parum convexa apiceque decurva, in plano ovati-rectangulata, asymmetrica, 0.6 mm longa, 0.5 mm lata, apice obtusa vel truncata, parce obscureque denticulata, margine antico e basi stricto inde arcuato, margine postico substricto; cellulae marginales 10-15 μ , mediae 20-25 \times 17-20 μ , basales 25-30 \times 20-25 μ , parietibus validiusculis, interruptis (inter se porosis), trigonis triradiatim incrassatis, ocelli in basi foliorum 1-3-(4), 45-50 \times 25-30 μ , cuticula levi; lobulus recte patulus, exiguus, folio 4-5-plo brevior, oblongus, inflatus, apice subrecte truncato, angulo dente unicellulari, subarcuato, papilla hyalina proxima notato; carina arcuato, sinu levi in folii marginem excurrente. Utriculi sparsi, ovati, 0.25-0.35 mm longi, 0.15-0.3 mm lati, in basi ramulorum 1-2. Amphigastria caulina contigua vel subimbricata, sinuatim inserta, maxima, ca. 5-plo caule latiora, subreniformi-cordata, 0.25-0.3 mm longa, 0.4-0.55 mm lata, ad 2/5 inciso-biloba, lobis late triangulatis, sinu acutis. Gynoecia in ramis terminalia, plerunque uno latere innovata; folia floralia oblique patula, obovata, 0.8 mm longa, medio 0.45 mm lata, apice subacuta, sub apice parce obscureque denticulata, basi angusta; lobulus folio ad 2/3 brevior, lanceolatus, apice acutus vel subacutus, profunde solutus; amphigastrium florale obpyriforme, 0.6 mm longum, 0.3 mm latum, ad 1/3 bifidum; perianthium obovato-oblongum, 0.7 mm longum, 0.3-0.5 mm latum, quadricornutum, cornibus clavato, \pm curvatim

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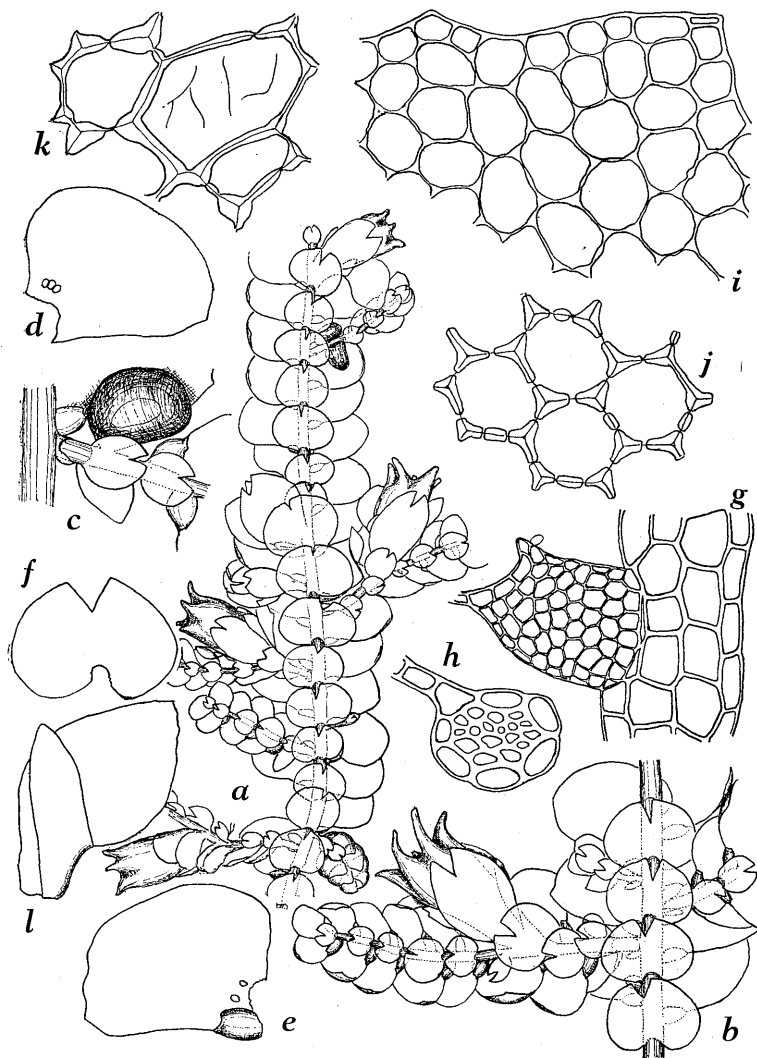


Fig. 28. *Ceratolejeunea ryukyuensis* Amak. *a*. Part of plant, ventral view, $\times 16$. *b*. Part of plant with a perianth, ventral v., $\times 24$. *c*. Part of branch with an utriculus, ventral v., $\times 40$. *d*, *e*. Leaves, $\times 40$. *f*. Underleaf, $\times 40$. *g*. Leaf-lobule, $\times 160$. *h*. Cross-section through the stem, $\times 160$. *i*. Marginal cells of leaf-lobule, $\times 480$. *j*. Median cells of leaf-lobule, $\times 480$. *k*. Basal cells including an ocellus, $\times 480$. *l*. Female bract, $\times 40$. Figures were drawn from the type (Y. Nino 89).

divergentibus, rostro angusto. Androecia in ramuli brevissimis terminalia, capitata; bracteis 2-3-jugis, amphigastriis binalibus, basi androecii insertis.

Hab. Isl. Iriomote: Mt. Gozadake, on rock?, Aug. 27, 1958, Y. Nino 89-type, in herb. HICH, the duplication also in herb. T. Shin of Kagoshima Univ. The genus is a new addition to the flora of Japan.

This species has large underleaves and small leaf-lobules, and is closely related to *Ceratolejeunea emarginatula* Steph. (of Siam) and *C. exocellata* Herz. (of Taiwan). However, in *C. emarginatula* the underleaf is emarginated at apex for 1/5 of its length and in *C. exocellata* the underleaf is bilobed up to 1/2 of its length with the obtuse sinus. In these two species there is no ocelli in the leaf according to the original descriptions (although Dr. Mizutani, in litt., found a basal ocellus in the type specimen of *C. emarginatula*); in contrast, the basal ocelli of *C. ryukyuensis* are 1-3-(4), separated by vegetative cells, rarely side by side, equidistant from the leaf-base.

42) The genus *Lopholejeunea*

Lopholejeunea minutilobula Horik. (Fig. 29)

Jour. Sci. Hiroshima Univ. b, 2, 2(2): 135, pl. 20, f. 11-14 (1934).

Plants medium in size, greenish to blackish brown, in depressed mats. Stems 10-30 mm long, 0.1-0.15 mm in diameter, with leaves 1.2-2 mm wide, irregularly and pinnately branched, rarely with \pm microphyllous short branches; rhizoids scarce. Leaves contiguous to slightly imbricate, widely spreading, dorsally covered or slightly passing the stem, slightly convex with decurved apex, when appressed the lobe widely ovate, \pm falcate, 0.8-1 mm long, 0.6-0.9 mm wide, apex rounded, margin entire; marginal cells 12-15 μ , median cells 25-38 \times 25-30 μ , basal cells 38-50 \times 25-30 μ , trigones acute, often triradiately thickened, intermediate thickenings of the wall often present, cuticle smooth; oil-bodies oval-oblong, 7-12 \times 5-8 μ , homogeneous, 9-14 per cell; leaf-lobule ovate to triangular, 0.2-0.35 mm long (1/4-1/3 the length of the lobe), 0.18-0.3 mm wide, much inflated except the apical free margin, apex obliquely truncate, apical tooth indistinct; keel nearly straight or arched. Underleaves distant, contiguous to slightly imbricate, sinuately inserted, orbicular to reniform, 0.4-0.45 mm long, 0.5-0.9 mm wide, 4.5-5 times as wide as the stem. Dioicous. Female inflorescences terminal on lateral branches, almost always with innovations (of *Lejeunea* type branching) on one side; female bracts oblong, 1.2-1.3 mm long, 0.6 mm wide, dentate throughout; apex

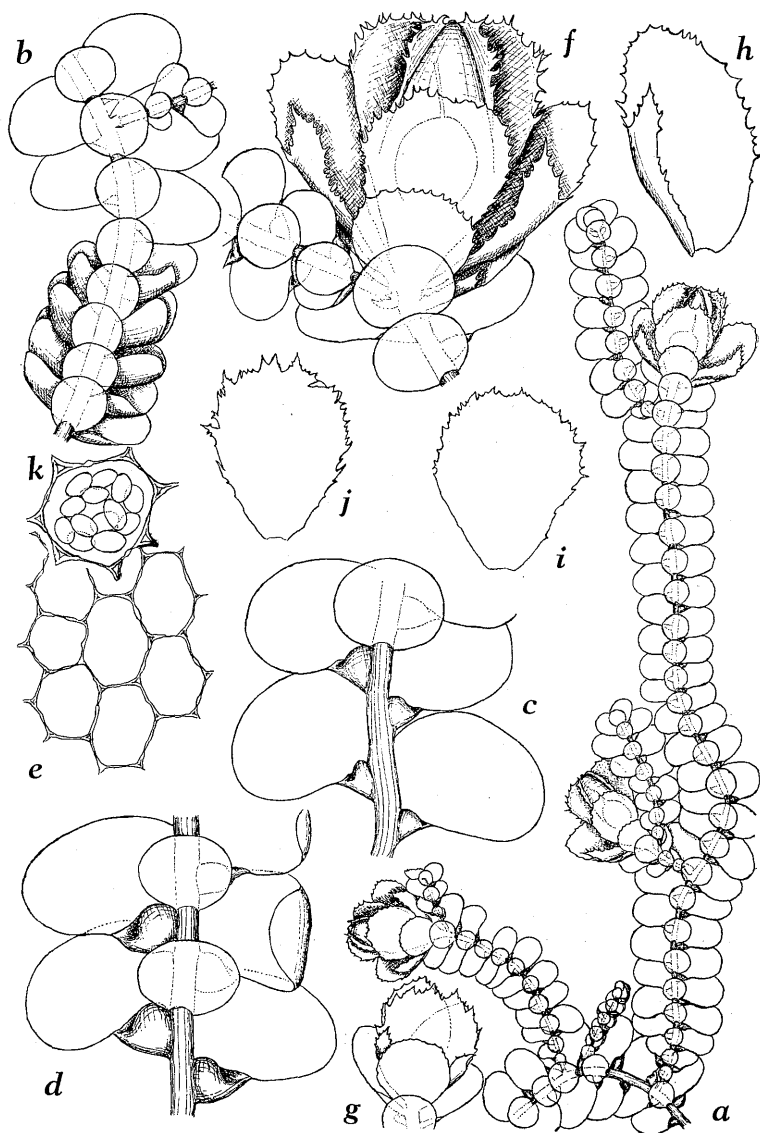


Fig. 29. *Lopholejeunea minutilobula* Horik. *a*. Part of female plant, ventral view, $\times 8$. *b*. Part of male plant, ventral v., $\times 16$. *c, d*. Part of stem, ventral v., $\times 24$. *e*. Median cells of leaf-lobe, $\times 320$. *f*. Part of plant with a perianth, ventral v., $\times 24$. *g*. Young female inflorescence, $\times 16$. *h*. Female bract, $\times 24$. *i, j*. Female bracteoles, $\times 24$. *k*. Oil-bodies, $\times 480$. Figures *a, d, f, h, i* were drawn from N. Takaki 38617; *b, c, e, g* from the type (Y. Horikawa 2535); *j*. from T. Takara 3637; *k* from T. Takara 3732.

obtuse with or without a point; lobule lanceolate, 1 mm long, 0.2 mm wide, margin [finely dentate; bracteole obovate, 1–1.1 mm long, 0.8 mm wide, apex rounded, margin \pm lobed and dentate; perianth obcordate, 1.3 mm long, 1 mm wide near apex, compressed, 4-keeled, lateral keel widely expanded, ventral keels narrow, keels densely laciniate-dentate. Male inflorescences terminal or intercalary on lateral branches; bracts up to 8 pairs, ventricose with much arched keel, lobule large with rounded apex; bracteoles present throughout.

Hab. On bark or rock. Amamioshima I.: on decaying wood, Dec. 29, 1930, Y. Horikawa 2535-type, in herb. HIRO. Okinawa I.: Hentona, 30 m alt., on wet rock, T. Amakawa 2878; Mt. Yonaha, 100–400 m, on bark, T. Shin 6192; Mt. Onnadake, Ch. Miyagi 3. Kume I.: Mt. Aradake, on rock, T. Takara 3727; Gushikawa-mura, Ch. M. 115. Ishigaki I.: Mt. Omoto, 100–200 m, on bark, T. S. 6727. Iriomote I.: Mt. Gozadake, 5 m, on bark, N. Takaki 38617, 38618; Mt. Shishigawadake, T. T. 3576, on rock; Kuiragawa, T. T. 3637, Ch. M. 449; Udaragawa, Ch. M. 317, 372; Sono, Ch. M. 5. Yonakuni I.: Mt. Kubura, 20 m, on soil covering rock, T. S. 7018; Kubura—Hikawa, 50 m, on bark, T. S. 7045.

The diagnostic characteristics of this species include: relatively small but much inflated leaf-lobules ($1/4$ – $1/3$ the length of the lobe), relatively large and wide underleaves (4.5–5 times as wide as the stem), female inflorescences with innovations of *Lejeunea* type branching on one side, the obcordate perianth with much expanded lateral keels, the large and finely dentate lobule of the female bract, and the bracteole whose margin is more or less lobed and dentate.

Lopholejeunea minutilobula is the most common species of the genus in the Ryukyus, and seems distributed in the low land.

Lopholejeunea takakii Amakawa, sp. nov. (Fig. 30, a–h)

Dioica videtur, fusco- vel atro-brunnea, depresso-caespitans. Caulis 10–30 mm longus, 0.12–0.15 mm in diametro, cum foliis 1.6–1.8 mm latus; in sectione transversa 6–7 cellulas crassus, cellulis epidermibus 12–14, majoribus, medullaribus 17–20, minoribus; irregulariter pinnatim ramosus. Folia caulina parum imbricata, late patula, antico caulem tegentia vel superantia, basi brevi inserta, parum convexa apiceque decurva, in plano falcati-ovata, 0.8–1 mm longa, 0.6–0.8 mm lata, apice rotundata, margine antico arcuato, postico substricto; cellulae marginales 12–15 μ , mediae 30–38 \times 25–30 μ , basales 38–50 \times

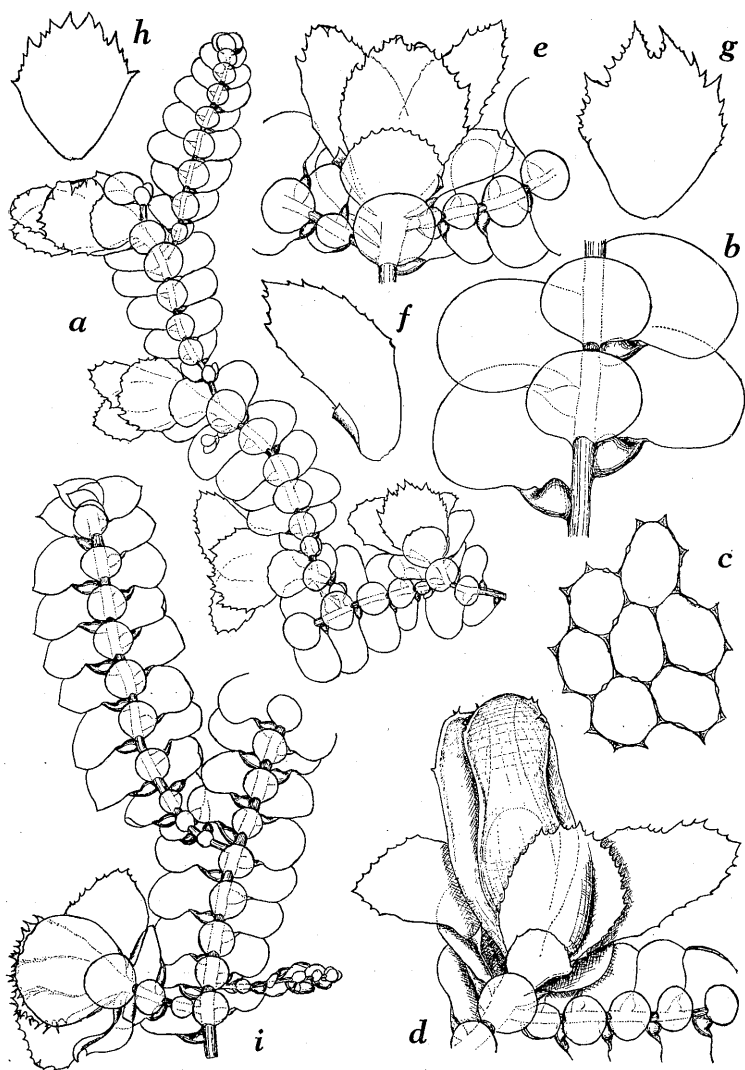


Fig. 30. *Lopholejeunea takakii* Amak. (a-h). a. Part of female plant, ventral view, $\times 8$. b. Part of stem, ventral v., $\times 24$. c. Median cells of leaf-lobe, $\times 320$. d. Part of stem with a perianth, ventral v., $\times 24$. e. Young female inflorescence, $\times 24$. f. Female bract, $\times 24$. g, h. Female bracteoles, $\times 24$. *Lopholejeunea nigricans* (Lindenb.) Schiffn. (i). Part of plant, ventral view, $\times 16$. Figures a-g were drawn from the type (N. Takaki 38654); h from T. Shin 6283; i from T. Amakawa 2757.

25–30 μ , trigonis acutis, saepe triradiatim incrassatis, incrassationibus mediana hic illic notato, cuticula levi; lobulus \pm exiguus, folio 4–3-plo brevior, supra carinam alte vesiculososo-inflatus, margine libero applanato, in situ parum conspicuo, apice oblique truncato, angulo obtuso; carina arcuato sinu amplo in folii marginem excurrente. Amphigastria caulina remotiuscula vel contigua, sinuatim inserta, suborbicularia vel reniformia, magna, 0.35–0.45 mm longa, 0.5–0.65 mm lata, 4–6-plo caule latiora. Gynoecia in ramis terminalia, uno latere (raro utrinque) innovata, repetito florifera; folia floralia caulinis duplo longiora, oblique patula, lanceolati-oblonga, 1.8–2 mm longa, 0.7–0.8 mm lata, apice acuta vel obtusa, supero 1/2 serrulata; lobulus folio 3-plo brevior, trigono-lanceolatus, apice acutus, integerrimus, parum solutus; amphigastrium florale obovatum, 1.6 mm longum, 1.1–1.2 mm latum, apice orbicularium, \pm lobatum et dentatum; perianthium 1/2 exsertum, oblongum, 2.2 mm longum, 0.8 mm latum, parum complanatum, 4-carinatum, carinis lateralibus parum expansis, posticibus angustis, ipsis parce spinoso, rostro brevissimo. Reliqua desunt.

Hab. Okinawa I.: Mt. Yonaha, 400m—summit, on bark, T. Shin 6283. Iriomote I.: Mt. Gozadake, on branch, consociated with *Cheilelejeunea imbricata*, Aug. 12, 1968, N. Takaki 38654-type, in herb. NICH, the duplication in herb. Takaki of Nagoya Univ.; Haterumamori, 400 m, on bark, T. S. 6882; Mt. Tedo, Y. Nino 39, T. S. 6420.

This species has a close affinity with *Lopholejeunea minutilobula*. It is difficult to distinguish the two on sterile plants. *L. takakii* also has subfloral innovations of *Lejeunea* type branching. The innovations are often repeatedly floriferous. The small and entire lobule of the female bract, and the oblong perianth with scarcely toothed keels are the most important characteristics of the species. *L. minutilobula* is easily distinguished from the species by the large, dentate lobule of the female bract, and the obcordate perianth with densely lacinate-toothed keels.

Lopholejeunea nigricans (Lindenb.) Schiffn. (Fig. 30, i)

Lopholejeunea brunnea Horik., Jour. Sci. Hiroshima Univ. b, 2, 1(2): 28, f. 9 (1931). *L. applanata* auct non (R. B. N.) Steph.: Amakawa, Biol. Fukuokana 7: 50, et al., quoad plant. Ryukyu.

Hab. Amamioshima I.: Naze, T. Shin 5884, 5886; Mt. Yuwandake, 600–694 m, on bark, N. Takaki & H. Katsurayama 37549. Okinawa I.: Mt. Yona-

ha, 400m—summit, on bark, T. S. 6272; Mt. Iyu, 410m, on bark, T. Amakawa 2757.

Lopholejeunea nipponica Horik. Hab. Tokunoshima I.: Mt. Amagi, T. Shin 5660. Okinawa I.: Mt. Yonaha, 400m—summit, on bark, T.S. 6278.

Lopholejeunea subfusca (Nees) Steph. Hab. Okinawa I.: Mt. Yonaha, 350m, on bark, T. Amakawa 2915, 2986; Mt. Iyu, 410m, on bark, T. A. 2957. Ishigaki I.: Mt. Fukaimoto, on bark, T. Takara 3050. Iriomote I.; Mt. Sakiyamada, on rock, T. T. 3654; Kuiragawa, Ch. Miyagi 438.

Key to *Lopholejeunea* of the Ryukyus

1. Stem-leaves apiculate or rounded, branch-leaves usually apiculate; underleaves always orbicular, 3 times as wide as the stem; female bracteole slightly dentate or entire..... *L. nigricans*
1. Stem- and branch-leaves never apiculate; underleaves comparatively large, wider than long, 3-7 times as wide as the stem..... 2
2. Plants comparatively large, 1.2-2 mm wide; leaf-lobules small, 1/4-1/3 the length of leaf-lobes, the sinus between keel and margin of leaf-lobe very shallow; subfloral innovations usually present..... 3
2. Plants smaller, less than 1.2mm wide; leaf-lobules comparatively large, 1/3 the length of leaf-lobes, the sinus between keel and margin of leaf-lobe \pm acute; subfloral innovations never present..... 4
3. Lobules of female bracts large and dentate throughout; perianth obcordate with densely laciniate-toothed keels..... *L. minutilobula*
3. Lobules of female bracts very small and entire; perianth oblong with scarcely toothed keels..... *L. takaii*
4. Leaf-lobes strongly decurved; underleaves much large, nearly as large as leaf-lobes, 5-7 times as wide as the stem; female bracteole orbicular—reniform, dentate at margin, often emarginately bilobed at apex.....
..... *L. nipponica*
4. Leaf-lobes slightly decurved; underleaves about half the size of leaf-lobes or less, 3-4 times as wide as the stem; female bracteole orbicular and entire..... *L. subfusca*

In this occasion I wish to express my hearty thanks to Dr. Y. Horikawa for his courtesy to allow me examine many type specimens collected by him

in the Ryukyu Archipelago and Taiwan. Also I thank to Dr. N. Takaki, Mr. Ch. Miyagi and other people who offered me many specimens collected by them in the Ryukyus.

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41) 日本新産の属であるツノクサリゴケ属 (新称) の 1 種が琉球の西表島で見出された。リュウキウツノクサリゴケ (新称) と名づける。葉下片小さく、腹葉は大きい。近縁種の *C. emarginatula* および *C. exocellata* とは、腹葉先端が $2/5$ ほど鋭く切れこむこと、また、葉上片基部に 1-3-(4) 個の巨大油細胞があることで区別できる。

42) 琉球産クロウロコゴケ属 5 種の産地と検索表を記した。このうち *L. minutilobula* リュウキウクロウロコゴケは雌花序が未知でその正体がよく判らなかつたが、良好な花被をつけた標本を得たので図説した。葉下片は小さいが強くふくれる。本属中琉球低地に分布する最も普通の種である。これによく似た 1 新種 *L. takakii* タカキクロウロコゴケ (新称) を図説した。雌花序をつけない標本では前種と区別し難いが、雌包葉下片および花被は明らかに異なる。また小笠原原産の *L. brunnea* クロチャウロコゴケが琉球にも記録されていたが、これは別報 (藓苔地衣雑報) で明らかにしたように *L. nigricans* クロウロコゴケの異名となった。なお、琉球で *L. applanata* にあてられていたものもすべて本種である。図示したのはクロチャウロコゴケの型で、茎葉はとがらないが、枝葉がとがる。

○モモとカキ その民族植物学的知見 (藤田安二) Yasuji FUJITA: Momo and Kaki, an ethnobotanical treatise of the Japanese names of peach and persimmon.

1) モモ *Prunus persica* (Linn.) Batsch は中国西北部黄河上流地方の原産であつて、このあたりの野生桃を土地の人は現在野桃または毛桃と呼ぶ。また中国ではいたるところで原始的な桃が栽培されているが、すべて毛桃と呼ばれ、離核の桃である¹⁾。

中国ではモモは 2500 年以前から利用され、詩経、礼記、山海経などにはすべて桃 *táo* とあるが、爾雅だけはモモに旄 *mao* を与えている。爾雅釈木篇には旄冬桃なりとあり、郭璞の注には子冬熟するものとある。

このことは極めて注目すべきことで、黄河上流すなわち周の故地の原産と考えられる桃が周代以前には *mao* と呼ばれていたことがわかり、これこそモモの最古の呼称と考えられる。我国のモモもその伝来は極めて古く、弥生時代以前であり、あるいは我国にもモモの野生があつたとも考えられたが、これはおそらく我国へのモモの伝播が民族移動にともなつて甚だ古く行われ、後の中国伝来の栽培桃とは別系統のもの